REMARKS

I. Status of the Application.

Claims 1-22 of the application are pending. In the Office Action, the Examiner:

(a) Objected to Figures 1-4 because they do not contain brief descriptions of each box;

(b) Rejected claims 1, 6, 12, and 17 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,644,674 to Mitchell et al. ("Mitchell");

(c) Rejected claims 1, 6, 9-12, and 20-22 under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 5,701,344 to Wakui ("Wakui");

(d) Rejected claims 1, 7-12, and 18-22 under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 6,178,248 to Marash ("Marash");

(e) Rejected claims 2, 3, 13, and 14 under 35 U.S.C. §103(a) as being obvious over Wakui, Mitchell or Marash; and

(f) Rejected claims 4, 5, 15, and 16 under 35 U.S.C. §103(a) as being unpatentable over Wakui, Mitchell or Marash in view of one the following: United States Patent No. 5,473,684 to Barlett ("Barlett"), United States Patent No. 5,627,901 to Josephson et al. ("Josephson") or United States Patent No. 5,703,957 to McAteer ("McAteer").

In this Response, Applicants have amended claims 1 and 12 to clarify the directional microphone system claimed. The amendments to the claims do not constitute new matter and are supported by the application as filed. Applicants respectfully submit that the foregoing amendments and following remarks incorporated herein overcome the Examiner's rejections to claims 1-22 and respectfully request reconsideration and the allowance of pending claims 1-22 in view of these amendments and remarks.

II. Applicants Amended Claims Do Not Constitute New Matter.

The amended claims 1 and 12 do not constitute new matter and are made to clarify the claimed directional microphone system. Specifically, claims 1 and 12 now make it clear that the cross-over means produces a "single monaural signal with an extended frequency bandwidth response". Support for the amended claims is provided in Figures 1-4 and in the specification on page 6, lines 1-3 and 8-10; page 10, lines 24-26; page 12, lines 21-23; and page 13, lines 17-18. Because the amended claims do not constitute new matter and are supported by the application, as filed, Applicants respectfully request acceptance of the claims, as amended.

III. The Objection to Figures 1-4 Should Be Withdrawn.

As requested by the Examiner, Applicants have submitted proposed replacement sheets that provide a brief description of each box in Figures 1, 3 and 4. While the Examiner stated that Figures 1-4 need to include a brief description of each box, the Applicants do not enclose proposed replacement sheet for Figure 2 because Figure 2 does not contain any boxes to describe. As required by 37 C.F.R. §1.121(d), each of the replacement sheets are attached hereto and are labeled in the header "Replacement Sheet." In order to comply with 37 C.F.R. §1.121(d), Applicants offer the below explanation of all the changes to the figures.

With the exception of Figure 3, all the proposed changes to the Figures consist of adding the name of each component depicted by a box in order to comply with the Examiner's request. As no names were originally provided, these changes are self-evident. In drafting the proposed changes to the figures, it was noticed that Figure 3 contained transcriptional errors. Specifically, the Original Figure 3 mistakenly depicted the first constant 86 being provided to summing unit

98 instead of being provided to multiplier 90 (see Original Figure 4). Replacement sheet 3 correctly depicts the first constant 86 being provided to multiplier 90. Further, Original Figure 3 did not have the line that connects first multiplier 88 and second multiplier 90 (see Original Figure 4). Figure 3 has been amended to include this line. For consistency purposes, Applicants have also amended Figure 3 to include reference numbers 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 148, and 162 which were not presented in Original Figure 3. Applicants respectfully submit that they have adequately described all of the proposed changes to Figures 1, 3 and 4 and have, thus, complied with 37 C.F.R. §1.121(d). Accordingly, Applicants respectfully request acceptance of its proposed replacement drawing sheets.

IV. The Rejection of Claims 1, 6, 12, and 17 Under 35 U.S.C. §102(b) As Being Anticipated by Mitchell Should Be Withdrawn.

In the Office Action, the Examiner rejected claims 1, 6, 12 and 17 under 35 U.S.C. §102(b) as being anticipated by Mitchell. Applicants respectfully submit that the subject invention is not anticipated by Mitchell because claims 1, 6, 12, and 17 are patentably distinguishable from Mitchell. A rejection under 102(b) can be overcome by showing that the claims of the subject invention are patentably distinguishable over the prior art or by amending the claims to patentably distinguish over the prior art. MPEP § 706.02.

A. Mitchell

Mitchell discloses a signal enhancement process that uses a plurality of microphones and a processor to select one of the inputs of the microphones or some averaged combination of the inputs in order to produce an output that represents the desired signal (i.e. the voice of a talker) and not an interfering background noise (i.e. the striking of a typewriter key). (Col. 1; lns. 30-

63). Mitchell utilizes a two-stage process to produce the desired output. In the first stage, as shown in Figure 2 of Mitchell, the absolute value of the difference between two microphone signals, M1 and M2, is added to the sum of those two signals. (Col. 2, lns. 30-33). The absolute value is obtained after a subtraction has been completed by sending the signal to a full wave rectifier. (Col.2, lns. 35-37). The result is then attenuated by a factor of two in an attenuator. (Col. 2, lns. 39-40). The microphone signals of microphones M3 and M4 are processed in the first stage in exactly the same manner as described above for microphones M1 and M2. (Col. 2, lns. 60-63). The second stage, as shown in Figure 4, "is identical in steps to the first stages except that the sign of the full-wave rectifier is opposite to that of the first stages." (Col. 2, lns. 66-68). Thus, in Mitchell, each microphone signal is processed in an identical fashion.

B. Mitchell Does Not Disclose All the Elements of Claims 1, 6, 12 and 17.

Mitchell does not disclose all the elements of amended independent claims 1 and 12. To properly apply a prior art reference to a means plus function limitation, the Examiner must show "that the prior art element perform(s) the identical function specified in the claim." MPEP § 2182.

Mitchell does not disclose "a prior art element that perform(s) the identical function" of the "**cross-over means for producing a single monaural signal, with an extended frequency bandwidth response**" limitation of claims 1 and 12, as amended. As claimed, the cross-over means comprises:

> a first filter means **for filtering only one of the first or second signals** and producing a first filter output, a second filter means **for filtering the combined signal** and producing a second filter output, and a unifying means **for combining the first filter output and the second filter output to produce the monaural signal** . . . .

Thus, unlike Mitchell's **identical process** of the signals of each microphone, the cross-over means of claims 1 and 12 utilizes **a first filter means that filters "only one of the signals", while the second filter means filters "the combined signal"** of the two microphone signals. Further, unlike Mitchell, the cross-over means further comprises a unifying means that combines "the first filter output and the second filter output to **produce the monaural signal**." Nowhere in Mitchell does it disclose the use of a cross-over section with a unifying means for producing a **"single monaural signal, with an extended frequency bandwidth response**."

Accordingly, Applicants respectfully submit that Mitchell does not anticipate claims 1 and 12, as amended, because it does not disclose a "prior art element [that] perform[s] the identical function of [**the cross-over means, the first filter means, the second filter means and the unifying means**] specified in the claim[s 1 and 12]." MPEP §2182. Further, Applicants respectfully submit that claims 6 and 17 are not anticipated by Mitchell because each of these claims depend from and incorporate all of the limitations of claims 1 and 12, respectively. Thus, for these reasons, Applicants respectfully request that the rejection of claims 1, 6, 12 and 17 as being anticipated by Mitchell be withdrawn.

V. The Rejection of Claims 1, 6, 9-12, and 20-22 Under 35 U.S.C. §102(e) As Being Anticipated by Wakui Should Be Withdrawn.

In the Office Action, the Examiner rejected claims 1, 6, 9-12 and 20-22 under 35 U.S.C. §102(e) as being anticipated by Wakui. Applicants respectfully submit that the subject invention is not anticipated by Wakui because claims 1, 6, 9-12, and 20-22 are patentably distinguishable from Wakui. A rejection under 102(e) can be overcome by showing that the claims of the

subject invention are patentably distinguishable over the prior art or by amending the claims to patentably distinguish over the prior art. MPEP § 706.02.

A. Wakui

Wakui discloses a true stereo audio processing apparatus designed to process two microphone signals independently and in an identical fashion in order to reduce wind noise pickup. As shown in Figure 3 of Wakui, after being amplified and passing through a delay circuit (35 and 36, respectively), each of the left-side and right-side audio signals is subjected to a subtraction process and then divided into a high band component and a low band component by passing through a low pass filter (39 and 40, respectively) and a high pass filter (41 and 42, respectively). (Col. 7, lns. 1-19; Col. 8, lns. 24-37). The low band output of each low pass filter is then supplied to an input terminal (A and C, respectively) of a level adjuster 46 and to an addition circuit 45, which combines the two signals low pass filter outputs and transfers the combine output to input terminal B of the level adjuster 46. (Col. 8, lns. 24-37). Level adjuster 46 mixes a variable ratio with the signals from input terminals A and B to produce an output signal j and mixes a variable ratio with the signals from input terminals B and C to produce an output signal k. (Col. 8, lns. 45-67). Output signals k and j are each respectively supplied to an addition circuit (43 or 44) so that each is added together with the respective output (e or f) of the high pass filter (41 and 42). (Col. 9, lns. 13-25). Thus, Wakui discloses an audio processing apparatus that produces a left-side and right side audio signal. (Col. 9, lns. 34-40).

B. Wakui Does Not Disclose All the Elements of Claims 1, 6, 9-12, and 20-22.

Similar to Mitchell, Wakui does not disclose all the elements of amended independent claims 1 and 12. To properly apply a prior art reference to a means plus function limitation, the

Examiner must show "that the prior art element perform(s) the identical function specified in the claim." MPEP § 2182.

Wakui does not disclose "a prior art element that perform(s) the identical function" of the "**cross-over means for producing a single monaural signal, with an extended frequency bandwidth response**" in claims 1 and 12, as amended. Wakui discloses a system that processes two microphone signals independently and in an identical fashion to produce **a left side and right side audio signal**. In contrast, the cross-over means of claims 1 and 12 produces "**a single monaural signal** with an extended frequency bandwidth response."

Further, Wakui does not disclose "**a cross-over means . . . comprising . . . a unifying means for combining the first filter output and the second filter output to produce the monaural signal**." The Examiner states that Wakui discloses "the cross-over means comprising a first filter means (40, 42), a second filter means (39) and a unifying means (43)." (Office Action, pg. 3). Assuming for the sake of this discussion that the Examiner is correct that Wakui's low pass filter 40 and high pass filter 42 is the first filter means and that Wakui's low pass filter 39 is the second filtering means, then Wakui's **addition circuit 43 cannot be the unifying means** because it does not perform the identical function as disclosed in claims 1 and 12. As claimed in claims 1 and 12, the unifying means performs the function of "**combining the first filter output and the second output to produce the monaural signal**." The addition circuit 43 does not combine Wakui's first filter means (40, 42) output and the second filter means (39) output to produce a monaural signal. Rather, the addition circuit 43 combines the output of high pass filter 41 and the output j of level adjuster 46. (Fig. 3, Col. 8, lns. 45-67). Thus, the addition circuit 43 of Wakui is not "**a unifying means for combing the first filter output and**

the second filter outputs to produce the monaural signal", because the addition circuit 43 does not add the outputs of Wakui's first filter means (40, 42) and second filter means 39.

Moreover, Wakui does not disclose "**a cross-over means . . . comprising a first filter means for filtering only one of the first or second signals and producing a first filter output.**" The Examiner refers to the low pass filter 40 and the high pass filter 42 as being the first filter means. (Office Action, p. 3). However, the low pass filter 40 and the high pass filter of Wakui **do not** filter "**only one of the first or second signals.**" As shown in Figure 3 of Wakui, the low pass filter 40 and high pass filter 42 each filter a combined signal output from subtraction circuit 38. The output of microphone element 32 is supplied to the subtraction circuit 38, along with the signal from input terminal 31 that passes through delay circuit 35. (Col. 7, lns. 1-10). The two signals are subjected to a subtraction process and then provided to low pass filter 40 and high pass filter 42. (Col. 8, 7-37). Thus, **Wakui does not disclose "a first filter means for filtering only one of the first or second signals**" because each of Wakui's high pass and low pass filters filter a combined signal.

Applicants respectfully submit that Wakui does not anticipate claims 1 and 12, as amended, because it **does not disclose** "prior art element[s that] perform the identical function **[of the cross-over means, first filter means and unifying means]** specified in the claim[s 1 and 12]." MPEP §2182. Further, Applicants respectfully submit that claims 6, 9-11 and 20-22 are not anticipated by Wakui because each of these claims depend from and incorporate all of the limitations of claims 1 and 12, respectively.

VI. The Rejection of Claims 1, 7-12, and 18-22 Under 35 U.S.C. §102(e) As Being Anticipated by Marash Should Be Withdrawn.

In the Office Action, the Examiner rejected claims 1, 7-12 and 18-22 under 35 U.S.C. 102(e) as being anticipated by Marash. Applicants respectfully submit that the subject invention is not anticipated by Marash because claims 1, 7-12, and 18-22 are patentably distinguishable from Marash. A rejection under 102(e) can be overcome by showing that the claims of the subject invention are patentably distinguishable over the prior art or by amending the claims to patentably distinguish over the prior art. MPEP § 706.02.

A. Marash

Marash discloses a dual-processing interference canceling system and method for processing a signal in order to produce an output that represents the target signal with substantially reduced interferences. Referring to Figure 1, the Marash system receives broadband input from an array of sensors 1a-1d and partitions the broadband into sub-bands. (Col. 1, lns. 1-4). The input from all the sensors enter into both a main-channel matrix 2 and a reference-channel matrix 3. (Col. 1, lns. 5-6) The main-channel matrix generates a main channel and then passes it through splitters 4 and 5 "which first split the main channel into two intermediate bands." (Col. 1, lns. 6-16). The lower intermediate band passes from splitter 4 and passes to splitters 6 and 7 that "further split the intermediate band into two sub-bands." (Col. 1, lns. 16-18). "The reference channels are processed in the same way by filters F1, 8, and F2, 9, to provide only the lower sub-band with ¼ of the input sampling rate, while the other subbands are discarded." (Col. 1, lns. 24-27). The reference channels' lower sub-bands are supplied to an adaptive filter 10 which generates canceling signals. (Col. 1, lns. 28-30). The canceling signals

are supplied to subtracter 11 where they are subtracted from the lower sub-band of the main channel. (Fig. 3, Col. 1, lns. 30-34). The upper bands of the main channel and the output of the subtracter 11 are combined through reconstruction filters 14, 15, 16 and 17 and an interpolation process to produce a broadband output. (Col. 1, lns. 42-67).

B. Marash Does Not Disclose All the Elements of Claims 1, 6, 7-12, and 18-22.

Marash does not disclose all the elements of amended independent claims 1 and 12. To properly apply a prior art reference to a means plus function limitation, the Examiner must show "that the prior art element perform(s) the identical function specified in the claim." MPEP § 2182.

Mitchell does not disclose "a prior art element that perform(s) the identical function" of the **"cross-over means for producing a single monaural signal, with an extended frequency bandwidth response"** in claims 1 and 12, as amended. Specifically, Marash does not disclose "a **cross-over means** . . . comprising **a first filter means for filtering only one of the first or second signals** and producing a first filter output." (Claims 1 and 12). The Examiner states that Marash discloses "the cross-over means comprising a first filter means (the paths connected to 2)." (Office Action, pg. 4). However, the paths connected to Marash's main-channel matrix 2 do not comprise "a first filter means **for filtering only one of the first or second signals**." As shown in Figure 1 and stated in Marash, "[b]roadband inputs from an array of sensors, 1a-1d, are sampled at an appropriate sampling frequency and entered into a main-channel matrix 2 . . . . (which) generates a main channel . . . . (that is supplied to) splitters F1, 4, and F2, 5." (Col. 5, lns. 1-10). Thus, the input from all the input sensors are processed by the main-channel matrix 2 and are fed into the paths connected to the main-channel matrix 2. Accordingly, the paths

connected to the main-channel matrix 2 does not disclose a "first filter means **for filtering only one of the first or second signals**" because the paths connected to main-channel matrix 2 actually **filter all the inputs** from the array of sensors instead of "**filtering only one of the first or second signals**."

Further, Marash does not disclose "a cross-over means . . . comprising . . . a unifying means **for combining the first filter output and the second filter output to produce the monaural signal**." The Examiner states that Marash discloses a "cross-over means comprising a first filter means (the paths connected to 2), a second filter means ([splitter F1] 8, [splitter F3] 9, [adaptive filter] 10), and a unifying means (11 **or** the last combined path)." Assuming for the sake of this discussion that the paths connected to main-channel matrix 2 are the first filter means and the splitters and adaptive filters are the second filter means, the subtracter 11 cannot be the unifying means of claims 1 and 12 because it does not **combine "the first filter output and the second filter output**." If the paths connected to main-channel matrix 2 is the first filtering means, then the first filter output is the broadband output produced by the entire system. As shown in Figure 1, the subtracter 11 does not combine this broadband output with the output of splitters 8 and 9 and the adaptive filter 10 (assumed to be the second filter means) but, rather, "subtracts canceling signals from the lower sub-band of the main channel to generate an output in the lower sub-band (so that) the output from the subtracter is combined with the other two-sub-bands . . . through reconstruction filters H1-H4, 14-17." (Col. 5, lns. 28-47). Thus, the subtracter cannot comprise the unifying means because it **does not combine "the first filter output and the second filter output to produce the monaural signal."**

It is not clear what the Examiner means by the "or the last combined path." However, if the Examiner is referring to the combination of the outputs by the reconstruction filters H1-H4 to produce the broadband output then **this also cannot comprise the unifying means of claims 1 and 12**. Referring to Figure 1, the reconstructors H3 and H4 combine the lower and upper sub-bands into a low intermediate band and then the reconstructors H1 and H2 combine the two intermediate bands into a broadband output. (Col. 5, lns. 48-57). Thus, the output produced by the reconstructors is the same output produce by the paths connected to the main-channel matrix which according to the Examiner are the same paths that make up the first filter means. Thus, the "last combined path" **produces the first filter output and does not combine it with the second filter output (the output of the splitters 8 and 9 and the adaptive filter 10).** Accordingly, "the last combined path" is not the unifying means of claims 1 and 12 because "the last combined path" does not **combine "the first filter output and the second filter output to produce the monaural signal."**

Applicants respectfully submit that Marash does not anticipate claims 1 and 12, as amended, because it **does not disclose** "prior art element[s that] perform the identical function **[of the cross-over means, first filter means and unifying means]** specified in the claim[s 1 and 12]." MPEP §2182. Further, Applicants respectfully submit that claims 6, 7-11 and 18-22 are not anticipated by Wakui because each of these claims depend from and incorporate all of the limitations of claims 1 and 12, respectively.

VII. The Rejections of Claims 2, 3, 13, and 14 Under 35 U.S.C. §103(a) As Being Obvious Over Wakui, Mitchell or Marash Should Be Withdrawn And Claims 4, 5, 15, and 16 Under 35 U.S.C. §103(a) As Being Obvious Over Wakui, Mitchell or Marash in View of Either Barlett, Josephson or McAteer Should Also Be Withdrawn.

In the Office Action, the Examiner rejected claims 2, 3, 13, and 14 under 35 U.S.C. §103(a) as being obvious over Wakui, Mitchell or Marash and rejected claims 4, 5, 15, and 16 under 35 U.S.C. §103(a) as being obvious over Wakui, Mitchell or Marash in view of either Barlett, Josephson or McAteer. Applicants respectfully submit that the subject invention is not obvious over these references because none of the references disclose, teach or suggest all of the claim limitations in claims 2, 3, 13, and 14 or of claims 4, 5, 15, and 16 of the subject invention. "To establish prima facie case of obviousness of the claimed invention, ... the prior art reference (or references when combined) **must teach or suggest all the claim limitations**." MPEP § 2143; *also see* MPEP §2143.03 (stating "To establish prima facie obviousness of the claimed invention, all of the claim limitations must be taught or suggested by the prior art."). Further, "[i]f an independent claim is not obvious under 35 U.S.C. §103, then any claim depending therefrom is not obvious." MPEP § 2143.03 (citing *In re Fine,* 837 F.2d 1382, 1385 (C.C.P.A. 1970)). Claims 2-5 each depend from and incorporate all of the limitations of independent claim 1, as amended, and claims 13-16 each depend from and incorporate all of the limitations of independent claim 12, as amended.

A) The Rejection of Claims 2, 3, 13 and 14 Under 35 U.S.C. 103(a) as Being Obvious Over Wakui, Mitchell or Marash Should Be Withdrawn.

The Examiner's rejection of claims 2, 3, 13, and 14 should be withdrawn because, as discussed above, neither Mitchell, Wakui nor Marash, alone or in combination, disclose, teach or suggest a directional microphone system that comprises:

> **a cross-over means for producing a single monaural signal with an extended frequency bandwidth response** from the desired source, the cross-over means **comprising a first filter means for filtering only one of the first or second signals** and producing a first filter output, a second filter means for filtering the combined signal and producing a second filter output, and **a unifying means for combining the first filter output and the second filter output to produce the monaural signal, the cross-over means operably connected to the combining means.**

(Claim 1). Each of the independent claims 1 and 12, as amended, contain these limitations. As discussed above, in relation to the 35 U.S.C. §102 rejection, neither Mitchell, Wakui nor Marash disclose, teach or suggest this cross-over means limitation. Further, none of the references disclose, teach or suggest "**a first filter means for filtering only one of the first or second signals.**" Moreover, neither Mitchell, Wakui nor Marash disclose, teach or suggest "**a unifying means for combining the first filter output and the second filter output to produce the monaural signal.**" Thus, because independent claims 1 and 12 each incorporate the cross-over means limitation and claims 2 and 3 depend from and incorporate all of the limitations of claim 1 and claims 13 and 14 depend from and incorporate all of the limitations of claim 12, the Applicants respectfully submit the rejection of claims 2, 3, 13, and 14 under 35 U.S.C. § 103(a) should be withdrawn.

The rejection of claims 2, 3, 13 and 14 should also be withdrawn because neither Mitchell, Wakui nor Marash disclose, suggest or teach the use of an omnidirectional microphone element or a plurality of omnidirectional microphones as the at least one first and/or second microphone means. The Examiner states that

> Both Wakui, Mitchell or Marash uses (sic) a general microphone for receiving the noise and the speech, wherein, one skilled in the art would have expected that the omnidirectional microphone would provide this function with a wide area coverage. Thus, it would have been obvious to one of ordinary skill in the

> art to modify the system of Wakui, Mitchell or Marash by utilizing omnidirectional microphone or omnidirectional microphones as the reception transducers in order to receive a sound from different directions and thus providing a wider reception area.

(Office Action pg. 5). Applicants respectfully submit that this conclusion fails to establish a prima facie case of obviousness, because the Examiner fails to meet the criteria of providing a "prior art reference [Mitchell, Wakui, or Marash] (or references when combined) . . . **[that] teach[es] or suggest[s] all the claim limitations**." MPEP § 2143. Accordingly, Applicants respectfully requests that the Examiner withdraw the rejection of claims 2, 3, 13, and 14 under 35 U.S.C. § 103(a) not only because they depend from allowable base claims 1 and 12, but because Mitchell, Wakui, or Marash do not disclose, teach or suggest the use of omnidirectional microphones.

B) The Rejection of Claims 4, 5, 15, and 16 Under 35 U.S.C. 103(a) as Being Obvious Over Wakui, Mitchell or Marash in View of Either Barlett, Josephson or McAteer Should Be Withdrawn.

As discussed above, neither Mitchell, Wakui nor Marash disclose a directional microphone system that comprises the cross-over means, as recited in independent claims 1 and 12. Accordingly, because independent claims 1 and 12 each incorporate the cross-over means limitation and claims 4 and 5 depend from and incorporate all of the limitations of claim 1 and claims 15 and 16 depend from and incorporate all of the limitations of claim 12, the Applicants respectfully submit the rejection of claims 2, 3, 13, and 14 under 35 U.S.C. § 103(a) should be withdrawn.

Moreover, neither Barlett, Josephson nor McAteer disclose a directional microphone system that comprises "a **cross-over means for producing a single monaural signal, with an**

extended frequency bandwidth response, representing the sound from the desired source." Rather, McAteer discloses a unitary housing of a directional microphone system that can house first-order gradient microphone elements. (Col. 3, lns. 10-37). Josephson discloses a directional microphone assembly and method for constructing the assembly that comprises a microphone element 50 that will function as "a directional, pressure gradient microphone" that produces a hypercardioid pattern. (Col. 10, lns. 44-47; Col. 11, lns. 1-8). Barlett discloses an improved second order differential microphone that comprises two first order differential microphones that have their outputs subtracted from one another. (Col. 3, lns. 59-67). It appears that the Examiner only cites these references to support its conclusion that the use of a first-order gradient microphone would have been obvious in Mitchell, Wakui and Marash in view of these references. The Applicants disagrees with this conclusion because none of these references teach or suggest that first-order gradient microphones can be used in the systems disclosed by Mitchell, Wakui and Marash. However, it is not currently necessary to go in depth into this issue because the Examiner has not found a reference that discloses, teaches or suggest the cross-over limitation of claims 1 and 12. Accordingly, Applicants respectfully submit that claims 4, 5, 15 and 16 are not obvious in view of Mitchell, Wakui or Marash in view of either Barlett, Josephson or McAteer because each of these claims depend from and incorporate all the claim limitations of claims 1 and 12, respectively, and **none of the cited references disclose, teach or suggest the cross-over means as claimed in claims 1 and 12.**

CONCLUSION

For all of the foregoing reasons, it is respectfully submitted that Applicants have made a patentable contribution to the art. Favorable reconsideration and allowance of this application, is therefore respectfully requested. In the event Applicants have inadvertently overlooked the need for payment of an additional fee, Applicants conditionally petition therefore, and authorize any deficiency to be charged to deposit account 09-0007.

Respectfully submitted,

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Enclosures: Replacement Sheets for Figures 1, 3 and 4
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